

Special Issue

Titanium Alloys: A Versatile Material for Additive Manufacturing

Message from the Guest Editors

Titanium alloys are extensively used in automotive, aerospace, and medical industries because of their light weight, good tensile strength, and excellent corrosion resistance. Moreover, they have the ability to maintain their properties at elevated temperatures. However, the high production cost limits their applications. Recent advancements in manufacturing, such as additive manufacturing (AM) fabricating near-net shapes, decrease the production cost of titanium parts. At the same time, a significant improvement in the fabrication of complex geometric shapes is leading to new applications. The Ti alloy microstructure is composed of α , β , and $\alpha+\beta$ depending on the process parameters pre- to post-processing (such as heat treatment processes), which provides an extended range of mechanical properties.

This Special Issue will address the progress of AM for Ti alloy processing to obtain optimum mechanical properties. It will also cover insights into microstructural phenomena leading to the mechanical properties of the manufacturing process, heat treatment, and alloy modifications of Ti alloys.

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Metallic materials play a vital role in the economic life of modern societies; contributions are sought on fresh developments that enhance our understanding of the fundamental aspects related to the relationships between processing, properties and microstructure – disciplines in the metallurgical field ranging from processing, mechanical behavior, phase transitions and microstructural evolution, nanostructures, as well as unique metallic properties – inspire general and scholarly interest among the scientific community.

Editor-in-Chief

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